WHAT IS CLAIMED IS:

1. An isolated and purified peptide comprising from 9 to about 50 amino acid residues and having an amino acid residue sequence that is selected from the group consisting of SEQ ID Nos: 4, 5, 6, and 7, having activity that inhibits platelet aggregation.

2. The peptide of claim 1 comprising the amino acid residue sequence of any of SEQ ID NOs:5-7.

3. The peptide of claim 2 consisting of any of SEQ ID NOs:5-7.

4. The peptide of claim 2 consisting essentially of any of SEQ ID NOs:5-7.

5. An antibody that specifically immunoreacts with integrin $\alpha_{IIB}\beta_3$ and comprises an amino acid residue sequence selected from the group consisting of SEQ ID Nos: 8, 25, 26, 27, 28, 29, 30, and 31, wherein the amino acid residue sequence is within a complementarity determining region of the antibody.

6. The antibody of claim 5 wherein the complementarity determining region is located in a heavy chain of the antibody.

7. The antibody of claim 5 wherein the complementarity determining region is HCDR3.

8. The antibody of claim 5 selected from the group consisting of the antibodies designated herein as RAD3, RAD4, RAD9, RAD11, RAD12, RAD32, RAD34, RAD87, or RAD88 and that has immunoreactivity with integrin $\alpha_{IIB}\beta_3$.

9. The antibody of claim 5 that is a human antibody.

10. An antibody having the immunoreactivity of the antibody of claim 8.

11. A method of inhibiting platelet aggregation comprising contacting platelets with an effective inhibitory amount of the peptide of claim 1.

12. A method of inhibiting platelet aggregation comprising contacting platelets with an effective inhibitory amount of the antibody of claim 5.

13. A method of inhibiting binding of fibrinogen to platelets comprising contacting the platelets with an effective inhibitory amount of the peptide of claim 1.

14. A method of inhibiting platelet aggregation comprising contacting platelets with an effective inhibitory amount of the antibody of claim 5.

15. An antibody having integrin $\alpha_{IIb}\beta_3$–binding activity, wherein the binding competes with binding activity of another protein, the other protein comprising an amino acid residue sequence of the tripeptide motif Arg-Ala-Asp (RAD) and wherin the binding is performed in a standard competition assay.

16. The antibody of claim 15 wherein the other protein is another antibody, the other antibody comprising an amino acid residue sequence within a complementarity determining region of the other antibody, wherein the amino acid sequence is selected from the group consisting of SEQ ID Nos: 8, 25, 26, 27, 28, 29, 30, and 31,and wherin the binding is performed in a standard competition assay.

17. An isolated and purified polynucleotide encoding a peptide comprising from 9 to about 50 amino acid residues and having an amino acid residue sequence that is selected from the group consisting of SEQ ID Nos: 4, 5, 6, and 7 the peptide having activity that inhibits platelet aggregation.

18. A vector comprising the polynucleotide of claim 17.

19. A host cell comprising the vector of claim 18.

20. A method for using a polynucleotide to produce a protein, the method comprising:

a) culturing the host cell of claim 19 under conditions for protein expression; and

b) recovering the protein comprising the amino acid sequence selected from the group consisting of SEQ ID Nos: 4, 5, 6, and 7 from the host cell culture.

21. A pharmaceutical composition comprising the peptide of claim 1 and a suitable pharmaceutical carrier in a form suitable for administration intravenously, intra-arterially, into the lymphatic circulation, intraperitoneally, transdermally, subcutaneously, intramuscularly, into the joint space, or by pulmonary administration.

22. A pharmaceutical composition comprising the antibody of claim 5 and a suitable pharmaceutical carrier in a form suitable for administration intravenously, intra-arterially, into the lymphatic circulation, intraperitoneally, transdermally, subcutaneously, intramuscularly, into the joint

space, or by pulmonary administration.

23. A pharmaceutical composition comprising the antibody of claim 15 and a suitable pharmaceutical carrier in a form suitable for administration intravenously, intra-arterially, into the lymphatic circulation, intraperitoneally, transdermally, subcutaneously, intramuscularly, into the joint space, or by pulmonary administration.

24. A peptide as claimed in claim 1 for use as a medicament for treatment to prevent thrombosis in conditions selected from the group consisting of pulmonary embolism, transient ischemic attacks (TIAs), deep vein thrombosis, coronary bypass surgery, and surgery to insert a prosthetic valve or vessel in autologous, non-autologous, or synthetic vessel graft.

25. An antibody as claimed in claim 5 for use as a medicament for treatment to prevent thrombosis in conditions selected from the group consisting of pulmonary embolism, transient ischemic attacks (TIAs), deep vein thrombosis, coronary bypass surgery, and surgery to insert a prosthetic valve or vessel in autologous, non-autologous or synthetic vessel graft.

26. An antibody as claimed in claim 15 for use as a medicament for treatment to prevent thrombosis in conditions selected from the group consisting of pulmonary embolism, transient ischemic attacks (TIAs), deep vein thrombosis, coronary bypass surgery, and surgery to insert a prosthetic valve or vessel in autologous, non-autologous, or synthetic vessel graft.

27. A peptide as claimed in claim 1 for use as a medicament for treatment to prevent thrombosis in procedure selected from the group consisting of angioplasty procedures performed by balloon, coronary atherectomy, and laser angioplasty.

28. An antibody as claimed in claim 5 for use as a medicament for treatment to prevent thrombosis in procedure selected from the group consisting of angioplasty procedures performed by balloon, coronary atherectomy, and laser angioplasty.

29. An antibody as claimed in claim 15 for use as a medicament for treatment to prevent thrombosis in procedure selected from the group consisting of angioplasty procedures performed by balloon, coronary atherectomy, and laser angioplasty.

30. A method of treating a subject to treat or prevent a disorder of thrombus formation, the disorder selected from the group consisting of thrombosis in pulmonary embolism, transient ischemic attacks (TIAs), deep vein thrombosis, coronary bypass surgery, surgery to insert a prosthetic valve or

vessel in autologous, non-autologous, or synthetic vessel graft, the method comprising administering to the subject an amount of a peptide as claimed in claim 1 effective to achieve the desired treatment.

31. A method of treating a subject to treat or prevent a disorder of thrombus formation, the disorder selected from the group consisting of thrombosis in pulmonary embolism, transient ischemic attacks (TIAs), deep vein thrombosis, coronary bypass surgery,surgery to insert a prosthetic valve or vessel in autologous, non-autologous, or synthetic vessel graft the method comprising administering to the subject an amount of an antibody as claimed in claim 5 effective to achieve the desired treatment.

32. A method of treating a subject to treat or prevent a disorder of thrombus formation, the disorder selected from the group consisting of thrombosis in pulmonary embolism, transient ischemic attacks (TIAs), deep vein thrombosis, coronary bypass surgery, surgery to insert a prosthetic valve or vessel in autologous, non-autologous, or synthetic vessel graft, the method.comprising administering to the subject an amount of an antibody as claimed in claim 15 effective to achieve the desired treatment.